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 NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2  Sep 17  IMSworld Pharmaceutical Company Directory name change
                  to PHARMASEARCH
 NEWS  3  Oct 09  Korean abstracts now included in Derwent World Patents
                  Index
 NEWS  4  Oct 09  Number of Derwent World Patents Index updates increased
 NEWS  5  Oct 15  Calculated properties now in the REGISTRY/ZREGISTRY File
 NEWS  6  Oct 22  Over 1 million reactions added to CASREACT
 NEWS  7  Oct 22  DGENE GETSIM has been improved
 NEWS  8  Oct 29  AAASD no longer available
 NEWS  9  Nov 19  New Search Capabilities  USPATFULL and USPAT2
 NEWS 10  Nov 19  TOXCENTER(SM) - new toxicology file now available on STN
 NEWS 11  Nov 29  COPPERLIT now available on STN
 NEWS 12  Nov 29  DWPI revisions to NTIS and US Provisional Numbers
 NEWS 13  Nov 30  Files VETU and VETB to have open access
 NEWS 14  Dec 10  WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
 NEWS 15  Dec 10  DGENE BLAST Homology Search
 NEWS 16  Dec 17  WELDASEARCH now available on STN
 NEWS 17  Dec 17  STANDARDS now available on STN
 NEWS 18  Dec 17  New fields for DPCI
 NEWS 19  Dec 19  CAS Roles modified
 NEWS 20  Dec 19  1907-1946 data and page images added to CA and CAplus
 NEWS 21  Jan 25  BLAST(R) searching in REGISTRY available in STN on the Web
 NEWS 22  Jan 25  Searching with the P indicator for Preparations
 NEWS 23  Jan 29  FSTA has been reloaded and moves to weekly updates
 NEWS 24  Feb 01  DKILIT now produced by FIZ Karlsruhe and has a new update
                  frequency

 NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
               CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
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=> s gluconic acid or gluconate
L1         1043 GLUCONIC ACID OR GLUCONATE

=> s odor# or flavour? or flavor?
L2        94725 ODOR# OR FLAVOUR? OR FLAVOR?

=> s l1 and l2
L3          164 L1 AND L2

=> s sodium or potassium
L4        40347 SODIUM OR POTASSIUM

=> s l3 and l4
L5           35 L3 AND L4

=> d 1-35 all

L5   ANSWER 1 OF 35  FSTA  COPYRIGHT 2002 IFIS
AN   2001(08):A1448   FSTA
TI   Suppression of bitterness using sodium salts.
AU   Keast, R. S. J.; Breslin, P. A. S.; Beauchamp, G. K.
CS   Correspondence (Reprint) address, G. K. Beauchamp, Monell Chem. Senses
     Cent., 3500 Market St., Philadelphia, PA 19104-3308, USA.  Tel. +1 215 898
     6666.  Fax +1 215 898 2084.  E-mail beauchamp(a)monell.org
SO   Chimia, (2001), 55 (5) 441-447, 22 ref.
     ISSN: 0009-4293
DT   Journal
LA   English
AB   Excessive bitterness is one of the major problems faced by the food
     industry.  In this study, effects of sodium salts (NaCl,
     sodium acetate, sodium gluconate), LiCl and
     KCl on bitter perception caused by bitter compounds (urea, quinine
     hydrochloride, caffeine, amiloride hydrochloride, MgSO.sub.4, KCl) were
     investigated.  Bitterness was assessed by taste panellists and data
     obtained were subjected to 2-way within-subjects analysis of variance
     (ANOVA).  NaCl was found to differentially suppress the bitterness of the
     compounds tested, causing 76 and 4% suppression of the bitterness of urea
     and MgSO.sub.4, respectively.  Sodium acetate, sodium
     gluconate and LiCl, but not KCl,  were also able to suppress the
     bitterness of urea.  Addition of sodium acetate to a model
     aqueous system containing urea and sucrose resulted in both reduced
     bitterness and enhanced sweetness.  Possible mechanisms by which
     sodium ions may influence perception of bitterness are discussed.
CC   A (Food Sciences)
CT   FLAVOUR; SALTS; SODIUM; BITTERNESS; SWEETNESS

L5   ANSWER 2 OF 35  FSTA  COPYRIGHT 2002 IFIS
AN   2000(10):A1524   FSTA
TI   Hydration properties of Na, K, Mg gluconates and gluconate
     /sucrose mixtures and their possible taste effect.
```

AU Aroulmoji, V.; Mathlouthi, M.; Birch, G. G.
CS Correspondence (Reprint) address, M. Mathlouthi, Lab. de Chimie Physique Ind., Fac. des Sci., Univ. de Reims Champagne Ardenne, BP 1039, Reims Cedex, France. Tel. +33-260-53239. Fax +33-260-53279. E-mail mohamed.mathlouthi(a)univ-reims.fr
SO Food Chemistry, (2000), 70 (4) 471-482, 32 ref.
ISSN: 0308-8146
DT Journal
LA English
AB Physical properties of aqueous solutions of gluconates (Na, K, and Mg) and **gluconate**/sucrose mixtures were studied in order to investigate whether a relationship exists between these properties and their **flavour**. Density and sound velocity measurements and proton NMR relaxation rates for the solutions were determined; apparent mol. vol. (AMV), apparent specific vol. (ASV), isentropic apparent molar compressibility (IAMC) and hydration numbers were calculated for the solutions as functions of molality. Using pure **gluconate** solutions, AMV and ASV increased with increasing **gluconate** concn., attributed to solute-solvent interactions. ASV data indicate that Na, K and Mg salts lie near the borderline of sour and sweet molecules. Adding gluconates to sucrose solutions (10 and 20%), resulted in IAMC decreases as **gluconate** concn. increased; IAMC were more negative with magnesium **gluconate** than the Na or K salts. NMR relaxation rates increased as **gluconate** concn. increased, however, Mg salts enhanced the hydration properties of sucrose-water systems more than the Na or K salts. It is concluded that **sodium** and **potassium** gluconates fit into the water structure better than magnesium **gluconate**. Addition of magnesium **gluconate** leads to a strong disturbance of both the structure of water and the hydration layer of sucrose in aqueous sucrose solutions.
CC A (Food Sciences)
CT ORGANIC ACIDS; PHYSICAL PROPERTIES; SALTS; SUCROSE; **GLUCONIC ACID** ; STRUCTURE

L5 ANSWER 3 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 2000(08):T0721 FSTA
TI Evaluation of certain food additives.
CS World Health Organization; Available from WHO, Marketing & Dissemination, 1211 Geneva 27, Switzerland. Price FS 35, FS 24.40 (developing countries)
SO WHO Technical Report Series, (2000), No. 891, viii + 168pp., many ref.
ISSN: 0512-3054
DT Report
LA English
AB This report presents conclusions of a joint FAO/WHO Expert Committee which met in Geneva, Switzerland from 9-18th June 1998 to evaluate safety of various food additives, with a view to recommending acceptable daily intakes (ADI) and to prepare specifications for identity and purity of food additives. The 1st part of the report contains a general discussion of the principles governing toxicological evaluation of food additives, intake assessment, and establishment and revision of specifications. Summaries of toxicological evaluations are then presented for: enzyme preparations (.alpha.-acetolactate decarboxylase, maltogenic amylase); **flavouring** agents (trans-anethole, furfural, menthol); food colours (curcumin, riboflavin from genetically modified Bacillus subtilis); glazing agents (medium- and low-viscosity mineral oils); preservatives (sulphur dioxide and sulphites); a sweetening agent (stevioside); thickening agents (carrageenan, processed Euchema seaweed, enzymically hydrolysed **sodium** carboxymethyl cellulose); .gamma.-cyclodextrin; glucono-.delta.-lactone and the Ca, Mg, K and Na salts of **gluconic acid**; and polyglycitol syrup. The Committee also evaluated safety of various groups of **flavouring** agents and assessed intake of specific food additives, namely benzoates,

BHA, BHT, sulphites and TBHQ. The report also contains annexes summarizing recommendations for ADI of the food additives considered, changes in status of specifications for these substances, further toxicological studies and other information required.
CC T (Additives, Spices and Condiments)
CT ADDITIVES; FOOD SAFETY ADDITIVES; ADI; FOOD ADDITIVES; REPORT; TOXICOLOGY; WORLD HEALTH ORGANIZATION

L5 ANSWER 4 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 2000(03):T0217 FSTA
TI Safety evaluation of certain food additives.
CS World Health Organization; Food & Agriculture Organization; Geneva, Switzerland; World Health Organization. Price FS 90, FS 63 (developing countries)
SO WHO Food Additives Series, (1999), No. 42, iv + 490pp. ISBN 92-4-166042-2, many ref.
ISSN: 0300-0923
DT Report
LA English
AB This publication contains monographs prepared at the 51st meeting of the joint FAO/WHO Expert Committee on Food Additives (JECFA) which took place in Geneva, Switzerland, from 9-18 June 1998. Each monograph summarizes safety data on selected food additives. These include: **flavouring** agents (trans-anethole, furfural, menthol); riboflavin from genetically modified Bacillus subtilis; sulphur dioxide and sulphites; stevioside; thickening agents (carrageenan, processed Eucheuma seaweed, enzymically hydrolysed **sodium** carboxymethyl cellulose); .gamma.-cyclodextrin, glucono-.delta.-lactone and **gluconic acid** salts; and polyglycitol syrups. Monographs on 7 groups of **flavouring** agents evaluated by the Procedure for the Safety Evaluation of **Flavouring** Agents are also presented, along with monographs assessing the intake of 5 food additives (benzoates, BHA, BHT, sulphites and TBHQ).
CC T (Additives, Spices and Condiments)
CT ADDITIVES; **FLAVOURINGS**; FOOD SAFETY ADDITIVES; FOOD ADDITIVES; REPORT

L5 ANSWER 5 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1999(08):A1191 FSTA
TI Anion size of **sodium** salts and simple taste reaction times.
AU Delwiche, J. F.; Halpern, B. P.; Desimone, J. A.
CS Monell Chem. Senses Cent., 3500 Market St., Philadelphia, PA 19104-3308, USA. E-mail delwiche(a)monell.org
SO Physiology & Behavior, (1999), 66 (1) 27-32, 41 ref.
ISSN: 0031-9384
DT Journal
LA English
AB Taste intensity and taste quality of aqueous solutions containing Na.sup.+ differ depending on the anions which are present. This study tested the hypothesis that simple taste reaction times (RT) in response to anterodorsal tongue stimulation with various Na salts (chloride, acetate, glutamate, ascorbate and **gluconate**) would increase with increasing anion size. RT to 100mM aqueous solutions of each Na salt were examined in 12 adults. RT increased ($P < 0.001$) with mol. wt. of the tastant; a high correlation ($r = 0.941$) was found between RT and the square root of anionic wt. A significant linear relationship ($P < 0.001$) was also found between RT and perceived taste intensity. Nevertheless, when results were controlled for the influence of taste intensity on RT, the linear relationship between RT and the square root of anionic wt. of the Na salts remained. Results are considered in relation to current models of gustatory responses. It is concluded that the anionic component of Na salts has an effect on the speed of taste responses beyond that

which could be accounted for by perceived taste intensity.
CC A (Food Sciences)
CT **FLAVOUR**; SALTS; SENSORY ANALYSIS; **SODIUM**; NA

L5 ANSWER 6 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1996(03):A0057 FSTA
TI Suppression of bitterness by **sodium**: variation among bitter taste stimuli.
AU Breslin, P. A. S.; Beauchamp, G. K.
CS Monell Chem. Senses Cent., 3500 Market St., Philadelphia, PA 19104, USA
SO Chemical Senses, (1995), 20 (6) 609-623, many ref.
ISSN: 0379-864X
DT Journal
LA English
AB Taste interactions between salts (NaCl, LiCl, KCl, L-arginine:L-aspartic acid, Na-acetate and Na-**gluconate**) and bitter tasting compounds (urea, quinine HCl, magnesium sulphate, KCl, amiloride HCl and caffeine) were investigated. In each study binary combinations of 3 or 4 concn. of 1 bitter compound with 4 concn. (0, 0.1, 0.3 and 0.5M) of one salt were rated for bitterness and saltiness using the method of magnitude estimation. In most cases, perceived bitterness was suppressed by salts, although the degree of suppression varied. In general, bitterness suppression was not accompanied by an equivalent reciprocal suppression of saltiness. Only MgSO.sub.4 and amiloride had suppressing effects on the saltiness of NaCl at the intermediate concn. and no bitter compound affected the saltiness at high concn. of NaCl. Since salt suppressed the bitterness of urea effectively, a detailed analysis of suppression of the bitterness of urea by different salts was conducted. Those studies indicated that the key component in this effect was the **sodium** or lithium ion for 2 reasons: all 3 **sodium** salts and the lithium salt had a suppressive effect on bitterness, whereas KCl did not; and the effect of salt on suppression of the bitterness of urea was independent of its perceived saltiness; i.e. NaCl, Na-acetate (which is perceived as less salty than NaCl), and Na-**gluconate** (which is perceived as less salty than Na-acetate) reduced bitterness comparably. Results suggest that there is a major peripheral component to the suppression of the bitterness of urea, and perhaps other bitter tasting compounds, by **sodium**.
CC A (Food Sciences)
CT BITTER COMPOUNDS; **FLAVOUR**; MINERALS; SALTS; SENSORY PROPERTIES; **SODIUM**; BITTERNESS

L5 ANSWER 7 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1993(03):T0046 FSTA
TI [Manufacture of mayonnaise.]
IN Dorozhkina, T. P.; Isaev, E. I.; Voskanyan, O. S.; Bakulina, O. N.; Khagurov, A. A.; Grin', V. T.
PA Union of Soviet Socialist Republics, Vsesoyuznyi Zaochnyi Institut Pishchevoi Promyshlennosti
SO USSR Patent, (1991)
PI SU 1692522
DT Patent
LA Russian
AB Mayonnaise is manufactured by mixing ingredients (dried skim milk, dried egg, acetic or citric acid, water, vegetable oils, **flavourings**, **sodium** carboxymethylcellulose, calcium **gluconate**), homogenizing the mixture, cooling and pasteurizing. **Flavourings** include sugar, salt and mustard powder; grape must, malt extract, powdered apple or powdered tomato may be used as an additional **flavouring**.
CC T (Additives, Spices and Condiments)
CT MAYONNAISE; PATENTS; SALAD DRESSINGS

L5 ANSWER 8 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1978(10):T0394 FSTA
TI [Aqueous stable solutions of mixtures of organic food acids and method for producing the same.]
Waessrige, stabile Loesungen von Gemischen organischer Genusssaeuren und Verfahren zur Herstellung derselben.
IN Bisle, H. E.
PA C. H. Boehringer Sohn
SO German Federal Republic Patent Application, (1978)
PI DE 2700568
DT Patent
LA German
AB Stable aqueous solutions of organic food acids with a solids content >55 wt.%, preferably 70-80 wt.%, comprise an aqueous solution of a mixture of lactic acid and citric acid, tartaric acid, malic acid or **gluconic acid**, in which 8-20%, preferably 12-18% of the acid equivalents are neutralized, preponderantly, and preferably exclusively, with K ions. The solutions are stable and pumpable and do not form crystalline deposits which could block production equipment. They have a strong refreshing **flavour** and are used to impart an acid taste to sweets, jellies, chocolate fillings and other foods. They have a reduced tendency to cause undesirable side effects such as hydrolytic degradation of gelatine and other thickeners, or inversion of sucrose compared with normal acid additives; they are also cheaper and have a stronger acid taste than buffered lactic acid compositions based on lactic acid and **sodium** lactate.
CC T (Additives, Spices and Condiments)
CT ACIDS; **FLAVOURINGS**; PATENTS; ACID SOLUTION; FOODS; FRG; GERMANY; PATENT

L5 ANSWER 9 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1977(04):S0656 FSTA
TI The effect of nitrite and certain other food additives on the quality of Finnish cooked sausage.
AU Nurmi, E.; Raevuori, M.; Hill, P.; European Meeting of Meat Research Workers [21st Symposium]
CS State Vet. Med. Inst., Haemeentie 57, 00550 Helsinki 55, Finland
SO Proceedings of the European Meeting of Meat Research Workers, (1975), No. 21, 209-211, 10 ref.
DT Conference
LA English
SL German
AB Effects of various additives on the quality of Finnish cooked beef/pork sausages were studied. Additives tested (singly or in combination) were NaNO.sub.2, **sodium** erythorbate, citric acid and glucono-.delta.-lactone. The organoleptic properties, pH, bacteriological quality and residual nitrite content of the products were determined; tables of results are given. Nitrite is essential for normal colour development; erythorbate + nitrite gives excellent colour formation. Glucono-.delta.-lactone and citrate may also improve colour formation and/or stability. Nitrite was also essential for the cured **flavour** of the product; use in combination with erythorbate and glucono-.delta.-lactone further improved **flavour**. Antibacterial effects of added nitrite were enhanced by added erythorbate, alone or in combination with citric acid. In samples in which only nitrite was added, the residual nitrite level in the ready-to-eat product was approx. 60% of the original concn. Addition of erythorbate + citrate reduces this value to approx. 50%; addition of glucono-.delta.-lactone further reduces residual nitrite concn. [See FSTA (1977) 9 4S605.]
CC S (Meat, Poultry and Game)
CT ADDITIVES; ANTIOXIDANTS; CITRIC ACID; LACTONES; NITRITES; ORGANIC ACIDS; SAUSAGES; ERYTHORBATES QUALITY # COOKED FINNISH; ERYTHORBIC ACID;

GLUCONIC ACID; GLUCONO- Ne -LACTONE; QUALITY # COOKED FINNISH

L5 ANSWER 10 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1976(10):T0486 FSTA
TI Specifications for identity and purity of some food additives including food colours, **flavour** enhancers, thickening agents and others.
CS Food & Agriculture Organization; World Health Organization; Rome, Italy
SO FAO Nutrition Meetings Report Series, (1975), No. 54B, v + 216pp.
DT Journal
LA English
AB Specifications and identity tests given in this publication were prepared at the 18th session of the Joint FAO/WHO Expert Committee on Food Additives and should be considered in conjunction with the report of that meeting [see FSTA (1975) 7 11T558]. Specifications are given for (i) food colours: annatto extracts, azorubine, beet red, .beta.-apo-8'-carotenal, .beta.-apo-8'-carotenoic acid methyl or ethyl ester, .beta.-carotene (synthetic), Brilliant Black PN, canthaxanthin, caramel colour (NH.sub.3 process), chlorophyll copper complex, chlorophyllin copper complex (Na or K salt), erythrosine, Food Green S, indigotine, iron oxides (and hydrated iron oxides), Patent Blue V, Ponceau 4R, Quinoline yellow, and turmetic; (ii) **flavour** enhancers: calcium d-L-glutamate, calcium 5'-guanylate calcium 5'-inosinate, calcium 5'-ribonucleotides, disodium 5'-guanylate, disodium 5'-inosinate, disodium 5'-ribonucleotides, L-(+)-glutamic acid, monoammonium L-glutamate, and monopotassium L-glutamate; (iii) thickening agents: enzyme-treated starches, carrageenan, pectin, tara gum and xanthan gum; and (iv) miscellaneous food additives: including aluminium **potassium** sulphate, aluminium sulphate, butyl p-hydroxybenazoate, calcium aluminium silicate, calcium **gluconate**, calcium lactate, calcium saccharin, dioctyl **sodium** sulphosuccinate, **potassium** chloride, **potassium** lactate, saccharin, **sodium** acetate, **sodium** lactate, and **sodium** saccharin. This document is also published as World Health Organization Food Additive Series No. 7.
CC T (Additives, Spices and Condiments)
CT ADDITIVES; BOOKS; COLORANTS; **FLAVOURINGS**; THICKENERS; BOOK; **FLAVOUR ENHANCERS**; FOOD ADDITIVES; FOOD COLORANTS; SPECIFICATIONS

L5 ANSWER 11 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1973(06):T0272 FSTA
TI Artificial sweeteners.
PA Cumberland Packing Corp.
SO British Patent, (1972)
PI GB 1299135
DT Patent
LA English
AB Saccharin composition having no bitter aftertaste employ mixtures of .gamma.-gluconolactone, **sodium** or **potassium** **gluconate**, and **potassium** bitartrate.
CC T (Additives, Spices and Condiments)
CT **FLAVOUR**; SACCHARIN; AFTERTASTE; BITTER # ELIMINATION

L5 ANSWER 12 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1972(03):S0315 FSTA
TI Additives and their influence upon technology and quality of meat products.
AU Wyler, O. D.
CS Chem. Section, Swiss Fed. Vet. Office, Berne, Switzerland
SO IFST Proceedings, (1971), 4 (3, part II) 167-174
DT Conference
LA English
AB Meat, frozen meat and meat products and conserves are defined. The action of the chief additives in use (common salt and natural colouring additives

such as saltpetre, nitrite and sulphurous acid) are generally discussed. Use of glucono-.delta.-lactone, starter cultures as acidifying agents, spices, condiments such as glutamates and ribonucleotides, and antioxidants is also briefly considered. Tables of meat additives in general use, other meat product additives (acids and salts, smoke, antioxidants, **flavour** enhancers, constitution-influencing additives, starch and higher dextrins, colouring spices, meat tenderizers, chemical preservatives etc.), unintentional or undesirable additives (hormones, antibiotics, pesticides) and their reaction and effects are given.

CC S (Meat, Poultry and Game)

CT ACIDITY; ADDITIVES; ANTIOXIDANTS; COLORANTS; CONDIMENTS; DEXTRINS; **FLAVOUR**; **FLAVOURINGS**; GLUTAMIC ACID; HORMONES; IMMUNOLOGY; LACTONES; MEAT; NITRATES; NITRITES; NUCLEOTIDES; PESTICIDES; PRESERVATIVES; SALT; SALTS; SMOKING; SPICES; STARCH; STARTERS; TENDERIZATION; ACIDIFYING; AGENTS; ANTIBODIES; ENHANCERS; **FLAVOUR (ADDITIVES)**; **FLAVOUR ENHANCERS**; **GLUCONIC ACID, Ne -LACTONE**; GLUCONO- Ne -LACTONE; GLUTAMATES; NACL; RIBONUCLEOTIDES; SALTPETRE; SMOKE; **SODIUM CHLORIDE**; SULPHUROUSACID; TENDERIZERS; ANTIBODIES ; ANTIOXIDANTS ; COLORANTS ; CONDIMENTS ; DEXTRINS ; HORMONES ; MEAT ; NITRITES ; PESTICIDES ; PRESERVATIVES ; SMOKE ; SPICES ; STARCH ; STARTERS ; SULPHUROUSACID

L5 ANSWER 13 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1971(09):T0470 FSTA

TI Patented no-cal sweetener causes no bitterness in no-cal beverages.

AU Anon.

SO Food Processing, (1971), 32 (4) 29

DT Journal

LA English

AB A sweetener containing saccharin, **sodium gluconate** and glucono delta lactone which does not give bitterness is available for use in "no-cal" soft drinks. **Flavour** oils (13 **flavours**) are also selected for max. sweetness and low bitterness factors. Cal content ranges from 0.027 cal/fl oz for clear cream soda to 0.398 cal/fl oz for grape soda.

CC T (Additives, Spices and Condiments)

CT BEVERAGES; CALORIES; **FLAVOUR**; ORGANIC ACIDS; SACCHARIN; **SODIUM**; SWEETENERS; BITTER; BITTERNESS; CALORIE; DRINKS; GLUCO-DELTA-LACTONE; **GLUCONATE**; **GLUCONIC ACID**; **GLUCONIC ACID, Nb -LACTONE**; NON-BITTER; NON-BITTER # LOW; **SODIUM GLUCONATE**; SWEETENER

L5 ANSWER 14 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1971(06):L0492 FSTA

TI Fructose - the extraordinary natural sweetener.

AU Freed, M.

CS Chem. tech. Service, Dawe's Lab. Inc., Chicago, Illinois, USA

SO Food Product Development, (1970), 4 (1) 38-39, 10 ref.

DT Journal

LA English

AB The sweetness of fructose in relation to sucrose and several other natural sugars and sugar alcohols, the effect of temp. on fructose sweetness, the presence of other materials (NaCl, acetic acid) on sucrose sweetness, the relative sweetness of mixtures of dextrose, fructose and sucrose, and some uses of fructose are reviewed. The uses and advantages of fructose-**gluconate** mixtures with saccharin, and for soft drinks, sour candies and low calorie foods are discussed.

CC L (Sugars, Syrups and Starches)

CT ACETIC ACID; BEVERAGES; CALORIES; **FLAVOUR**; FRUCTOSE; GLUCOSE; ORGANIC ACIDS; SACCHARIN; SALT; SOFT DRINKS; SUCROSE; SUGAR CONFECTIONERY; SWEETENERS; CALORIE; CALORIES LOW FOODS; CANDIES; DEXTROSE;

DEXTROSE-FRUCTOSE-SUCROSE MIXTURES; DRINKS; FOODS; **FRUCTOSE-GLUCONATE-SACCHARIN MIXTURES; GLUCONATE; GLUCONIC ACID;** LOW; LOW CALORIE FOODS; NACL; **SODIUM CHLORIDE;** SOFT; SOUR; SWEETNESS; TASTE; TEMEPRATURE

L5 ANSWER 15 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 1970(03):P0303 FSTA
TI [Method for preparing a sterilized custard or blancmange product with good storage qualities.]
IN Muynck, E. P. L. de; Branteghem, A. E. van
PA NV Stijfsel-en Glucosefabriek ''Sas Van Gent''
SO Netherlands Patent Application, (1969)
PI NL 6801430
DT Patent
LA Dutch
AB A mixture is prepared of milk, sugar, colourings and **flavourings**, a thickening agent with a high content of amylose (obtained by fractionating starch flour), and a further, non-amylaceous thickening agent. The mixture is heated for .ltoreq.3 min to a temp. of 130-155.degree.C, optionally homogenized and cooled, and packaged aseptically. The improvement consists in the use of the non-amylaceous thickening agent which entirely or partly consists of a water-soluble alginate, e.g. **sodium** alginate, and in adding the salt of a multi-valent metal, e.g. calcium **gluconate**.
CC P (Milk and Dairy Products)
CT AMYLOSES; CALCIUM; DESSERTS; ORGANIC ACIDS; POLYSACCHARIDES; PROCESSING; **SODIUM**; THICKENERS; AGENTS; ALGINATE; ALGINIC ACID; AMYLOSE; BLANCMANGE; **CALCIUM GLUCONATE**; CUSTARD; CUSTARDS; **GLUCONATE; GLUCONIC ACID; SODIUM ALGINATE;** STERILIZED; THICKENING

L5 ANSWER 16 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 574203 FROSTI
TI Masking agent.
IN Nakamura T.; Oguni N.
PA Fujisawa Pharmaceutical Co. Ltd
SO European Patent Application
PI EP 1163852 A1
AI 20000209
PRAI Japan 19990218
DT Patent
LA English
SL English
AB A masking agent is described that contains a non-toxic salt of **gluconic acid** as the active ingredient. It is capable of masking unpleasant tastes and odours associated with food substances such as fish oils, soya milk, meat products, powdered milk products (skimmed milk and whey protein concentrate), and the sweetener aspartame. The preferred salts are **sodium gluconate** and calcium **gluconate**.
SH ADDITIVES
CT APPLICATIONS; BITTERNESS; CALCIUM **GLUCONATE**; EUROPEAN PATENT; **FLAVOUR; FLAVOURS**; GLUCONATES; MASKING; MASKING AGENTS; OFF **FLAVOURS**; OFF ODOURS; PATENT; SENSORY PROPERTIES; **SODIUM GLUCONATE**
DED 5 Feb 2002

L5 ANSWER 17 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 557968 FROSTI
TI Amino acid-containing composition having reduced bitter taste.
IN Sonoda C.; Murase K.
PA Ajinomoto Co. Inc.

SO Japanese Patent Application
PI JP 2000217547 A 20000808
AI 19990127
NTE 20000808
DT Patent
LA Japanese
SL English
AB **Sodium gluconate** is added to amino acids and peptides to mask the bitter taste.
CT BITTERNESS MASKING AGENTS; **FLAVOUR** MASKING AGENTS; GLUCONATES; JAPANESE PATENT; PATENT; **SODIUM GLUCONATE**
DED 13 Jul 2001

L5 ANSWER 18 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 539992 FROSTI
TI Specific food additives.
AU World Health Organization; Food and Agriculture Organization; Joint Expert Committee on Food Additives
SO Evaluation of certain food additives: 51st report of JECFA, Geneva, June 1998., Published by: WHO, Geneva, 2000, 17-49 (0 ref.)
World Health Organization; Food and Agriculture Organization; Joint Expert Committee on Food Additives
ISBN: 92-4-120891-0
DT Book Article
LA English
AB Results from evaluations by the Joint FAO/WHO Expert Committee of 16 food additives (four for the first time and 12 considered at previous meetings) are summarised. Enzyme preparations of alpha-acetolactate decarboxylase and maltogenic amylase derived from genetically modified microorganisms are briefly considered. The **flavouring** agents, trans-anethole, furfural and menthol, are examined in detail including results of long term intake/toxicity studies with rats and mice. Results from studies with cucurmin, and riboflavin from genetically modified Bacillus subtilis are evaluated; the temporary Acceptable Daily Intake (ADI) was extended for cucurmin, and specifications for riboflavin were established. Additional data for medium and low viscosity mineral oils are evaluated and temporary ADIs established at a previous meeting extended. Sulfur dioxide and sulfites are examined with particular reference to idiosyncratic intolerance and general toxicity of sulfites. Stevioside, a sweet glycoside of steviol, was evaluated for the first time. Results from studies of the metabolism and toxicity of stevioside in rats are examined, however, no specifications are given. The thickeners, carrageenan, processed Eucheuma seaweed and enzymatically hydrolysed **sodium** carboxymethyl cellulose, are reviewed again and recent metabolic and toxicological evidence is discussed. Recent data for gamma-cyclodextrin, glucono-delta-lactone, the calcium, magnesium, **potassium** and **sodium** salts of **gluconic acid** and polyglycitol syrup (not previously evaluated) are also evaluated and new specifications made. Information on the evaluations and specifications are given in an annex at the end of the whole report.
SH ADDITIVES
CT ADDITIVES; ADI; CARRAGEENAN; CELLULOSE DERIVATIVES; COLOURINGS; CUCURMIN; CYCLODEXTRINS; DIETARY GUIDELINES; ENZYMES; EUCHEUMA; **FLAVOURINGS**; FURALDEHYDE; GAMMA CYCLODEXTRIN; GDL; GLUCONATES; MENTHOL; METABOLISM; MINERAL OILS; POLYGLYCITOL SYRUP; PRESERVATIVES; RIBOFLAVIN; **SODIUM** CARBOXYMETHYLCELLULOSE HYDROLYSATES; STEVIOSIDE; SULFITES; SULFUR DIOXIDE; SWEETENERS; THICKENERS; TOXICITY; TRANS ANETHOLE; VITAMINS
DED 12 Dec 2000

L5 ANSWER 19 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 539991 FROSTI

TI Evaluation of certain food additives: 51st report of JECFA, Geneva, June 1998.
AU World Health Organization; Food and Agriculture Organization; Joint Expert Committee on Food Additives
SO Published by: WHO, Geneva, 2000, 168pp
WHO Technical Report Series, No. 891
ISBN: 92-4-120891-0
DT Book
LA English
AB This report represents the conclusions of a Joint FAO/WHO Expert Committee convened to evaluate the safety of food additives and contaminants with a view to recommending Acceptable Daily Intakes (ADIs) for humans, to undertake toxicological evaluations of certain food additives and **flavouring** agents, to assess the intake of certain food additives and to review and prepare specifications for selected food additives and **flavouring** agents. The principles governing toxicological evaluation of food additives and the assessment of food additive intake are discussed including enzyme preparations derived from genetically modified (GM) microorganisms and limits for heavy metals. Toxicological data are presented and evaluated on enzyme preparations (alpha-acetolactate decarboxylase and maltogenic amylase), **flavouring** agents (trans-anethole, furfural and menthol), food colours (cucurmin, riboflavin from GM Bacillus subtilis), glazing agents (medium- and low-viscosity mineral oils), preservatives (sulfur dioxide and sulfites), a sweetening agent (stevioside), thickening agents (carrageenan, processed Eucheuma seaweed, enzymatically hydrolysed **sodium** carboxymethyl cellulose), gamma-cyclodextrin, glucono-delta-lactone and the calcium, magnesium, **potassium** and **sodium** salts of **gluconic acid** and polyglycitol syrup. The safety of **flavouring** agents particularly their metabolism, and intake of food additives including benzoates, butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT), tert-butylhydroquinone and sulfites were also examined. Summary tables of the Committee's recommendations for ADIs of food additives considered, changes to specifications for these substances and specific **flavouring** agents are given at the end of the report.
CT ADDITIVES; ADI; ANTIOXIDANTS; BENZOATES; BHA; BHT; COATINGS; COLOURINGS; CUCURMIN; DIETARY GUIDELINES; **FLAVOURINGS**; GLAZES; HEAVY METALS; INTAKE; RIBOFLAVIN; SAFETY; STEVIOSIDE; SULFITES; SWEETENERS; THICKENERS; TOXICITY; TRACE ELEMENTS; VITAMINS
DED 12 Dec 2000

L5 ANSWER 20 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 531102 FROSTI
TI Hydration properties of **sodium**, **potassium**, magnesium gluconates/sucrose mixtures and their possible taste effect.
AU Aroulmoji V.; Mathlouthi M.; Birch G.G.
SO Food Chemistry, 2000, (September), 70 (4), 471-482 (32 ref.)
ISSN: 0308-8146
DT Journal
LA English
SL English
AB The taste of food is important for its acceptance. In many foods, additives are used for various reasons, which may alter taste. Understanding the basic science of additive-taste interactions might help in new product development or in the development of novel foods. This work studied the hydration properties of gluconates, which are complexing agents, and **gluconate**/sucrose mixtures in aqueous solutions in order to investigate whether there was a relationship between hydration properties and taste. Apparent specific volumes that reflect packing of water molecules around the solute, isentropic apparent molar volume to measure the compaction of the hydration layer around the molecules, and

hydration numbers were determined on **sodium, potassium**, and magnesium gluconates. The apparent specific volume results suggested that the **gluconate** salts laye near the borderline of sour and sweet molecules. These salts were added to 10 and 20% sucrose solutions to elucidate the influence of gluconates on water association in sucrose solutions. The extent of hydration of gluconates in sucrose-water systems, its effect on molecular motion (measured using nuclear magnetic resonance relaxation), and the relationship of effective hydration size and taste are discussed. The authors suggest that molecules that pack better in the water structure may exchange hydration for receptors quickest and may modulate taste better than molecules with poorer packing structures.

SH PROCESSING

CT CARBOHYDRATES; CHEMICAL STRUCTURE; DENSITY; **FLAVOUR**; GLUCONATES; **GLUCONIC ACID**; MECHANISMS; MOLECULAR PROPERTIES; MOLECULAR SIZE; MOLECULAR STRUCTURE; NMR SPECTROSCOPY; PHYSICAL PROPERTIES; RHEOLOGICAL PROPERTIES; SALTS; SENSORY PROPERTIES; SIZE; SPECTROSCOPY; SUGARS; VISCOSITY

DED 1 Sep 2000

L5 ANSWER 21 OF 35 FROSTI COPYRIGHT 2002 LFRA

AN 527407 FROSTI

TI Compendium of food additive specifications, Addendum 7: 53rd session of JECFA, Rome, June 1999.

AU Food and Agriculture Organization; World Health Organization; Joint Expert Committee on Food Additives

SO Published by: FAO, Rome, 1999, 159pp
FAO Food and Nutrition Paper, No.52, Add.7
ISBN: 92-5-104370-1

DT Book

LA English

AB Specifications of identity and purity are presented for the following additives: alpha-acetoacetate decarboxylase from Bacillus brevis expressed in Bacillus subtilis; adipic acid; alpha-amylase from Bacillus megaterium expressed in Bacillus subtilis; alpha-amylase from Bacillus stearothermophilus expressed in Bacillus subtilis; argon; carob bean gum; chymosin A from Escherichia coli K-12 containing the prochymosin A gene; chymosin B from Aspergillus niger vat. Awamori containing the prochymosin B gene; curdlan; gamma-cyclodextrin; erythritol; ferrous **gluconate**; ferrous sulfate; ferrous sulfate dried; fumaric acid; guar gum; gum arabic; helium; hydrogenated poly-1-decene; magnesium **gluconate**; DL-malic acid; maltogenic amylase from Bacillus stearothermophilus expressed in Bacillus subtilis; nitrogen; oxygen; **potassium** metabisulfite; **potassium** sulfite; riboflavin from Bacillus subtilis; **sodium** hydrogen sulfite; **sodium** iron EDTA; **sodium** metabisulfite; **sodium** sulfate; **sodium** sulfite; **sodium** thiosulfate; sucrose esters of fatty acids; DL-tartaric acid; L(+)-tartaric acid; thaumatin; and xanthan gum. The following parameters are given for each additive: synonyms, definition, CAS number, chemical formula, chemical names, structural formula, assay, description, purity, functional uses, characteristics, and identification tests. In addition, specifications of identity and purity are presented for numerous **flavouring** agents.

CT ACIDULANTS; ADDITIVES; APPLICATIONS; BACTERIAL ENZYMES; CAROB GUM; CHYMOSIN; COMMERCIAL ENZYMES; CURDLAN; CYCLODEXTRINS; DETERMINATION; ENZYMES; ERYTHRITOL; **FLAVOURINGS**; GUAR GUM; GUM ARABIC; GUMS; IDENTIFICATION; METABISULFITES; MICROBIAL ENZYMES; PRESERVATIVES; PROPERTIES; PURITY; SPECIFICATIONS; STABILIZERS; SUCROSE FATTY ACID ESTERS; SULFITES; TARTARIC ACID; THAUMATIN; THICKENERS; XANTHAN GUM

DED 14 Jul 2000

L5 ANSWER 22 OF 35 FROSTI COPYRIGHT 2002 LFRA

AN 524351 FROSTI
TI Method of controlling release of bitterness inhibitors in chewing gum and gum produced thereby.
IN Gudas V.V.; Reed M.A.; Schnell P.G.; Tyrpin H.T.; Witkewitz D.L.; Greenberg M.J.; Wolf F.R.
PA Wm Wrigley Jr Co.
SO European Patent Application
PI EP 979039 A1
WO 9823166
AI 19961223
DT Patent
LA English
SL English
AB In formulation of chewing gum containing bitter substances such as caffeine or medications, it is desirable to include a bitterness inhibitor that is rapidly released during chewing. This patent application describes a process for physical modification of the release properties of the inhibitor. This is coated by encapsulation, followed by agglomeration and entrapment by absorption. The method may be used with **sodium gluconate** or other bitterness inhibitor such as **sodium** ascorbate, **sodium** glycinate, **sodium** ferulate, or ferulic acid. A rapid or a delayed release may be achieved, as required in the formulation. The inhibitors may be used in low- or high-moisture gum compositions, and with sucrose-type or sugar-free gums.
CT ADDITIVES; BITTERNESS; CHEWING GUM; CONFECTIONERY; CONTROLLED RELEASE ADDITIVES; EUROPEAN PATENT; **FLAVOUR**; INHIBITION; PATENT; SENSORY PROPERTIES; SUGAR CONFECTIONERY
DED 16 Jun 2000

L5 ANSWER 23 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 522230 FROSTI
TI Method of making a reduced salt bread dough product and reduced salt bread dough product.
IN Takano H.; Kakiuchi T.; Ise N.
PA Fujisawa Pharmaceutical Co. Ltd; National Food Research Institute; Ministry of Agriculture; Forestry and Fisheries
SO United States Patent
PI US 6013298 B 20000111
WO 9617521 19960613
AI 19951128
PRAI Japan 19941207
NTE 20000111
DT Patent
LA English
SL English
AB Alkali metal gluconates may be used as full or partial replacements for **sodium** chloride in bread and bakery products. This patent application describes the use of gluconates in bakery applications. They are particularly suitable for individuals needing to follow a low-**sodium** diet, as the **flavour** is comparable to that of conventional baked goods. **Sodium** or **potassium gluconate** may be used in chilled and frozen doughs, bread, French bread, rye bread, sweet dough products such as panettone, pizza doughs, and steamed Oriental buns and doughnuts.
CT APPLICATIONS; BAKERY ADDITIVES; GLUCONATES; HEALTHY FOODS; LITE FOODS; LOW **SODIUM** FOODS; PATENT; **POTASSIUM GLUCONATE** ; **SODIUM GLUCONATE**; US PATENT
DED 2 Jun 2000

L5 ANSWER 24 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 518632 FROSTI

TI Quick-setting gel mix.
IN Hembling M.V.; Leusner S.J.; Spradlin J.E.
PA Kraft Foods Inc.
SO United States Patent
PI US 5997937 B 19991207
AI 19980211
NTE 19991207
DT Patent
LA English
SL English
AB A quick-setting mix is described, for preparation of dessert gels with superior clarity. The mix contains a sweetening agent (sugar and/or intense sweeteners), **sodium** and/or **potassium** alginate - a calcium salt that is slowly soluble in water. It also contains an antioxidant such as ascorbic acid, and a catalyst for the reaction of the antioxidant with dissolved oxygen, promoting clarity within the gel. Suitable catalysts are copper **gluconate** and ferric sulfate. The slowly soluble calcium salt becomes incorporated into a crystalline sugar matrix. The mix is readily dispersed, and gives a gel with a pH in the range 3.5-5.5. It may be fruit-**flavoured** if required.
CT CALCIUM SALTS; DESSERT MIXES; DESSERTS; DRIED FOODS; GEL MIXES; GELATION; GELS; MIXES; MIXTURES; PATENT; QUICK SETTING GELS; RAPID GELATION; SALTS; US PATENT
DED 20 Apr 2000

L5 ANSWER 25 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 509721 FROSTI
TI Safety evaluation of certain food additives: 51st meeting of JECFA, Geneva, June 1998.
AU World Health Organization; Food and Agriculture Organization; Joint Expert Committee on Food Additives
SO Published by: WHO, Geneva, 1999, 490pp (many ref.)
WHO Food Additives Series, No.42
ISBN: 92-4-166042-2
DT Book
LA English
AB The report outlines biological and toxicological information used to evaluate the safety of, and to estimate acceptable daily intakes for various food additives. These include **flavouring** agents, food colours, preservatives, and thickening agents. Individual additives surveyed include trans-anethole; furfural; menthol; riboflavin from genetically modified Bacillus subtilis; sulfur dioxide and sulfites; stevioside; carrageenan; processed Eucheuma seaweed; enzyme-hydrolysed **sodium** carboxymethyl cellulose; gamma-cyclodextrin; glucono-delta-lactone and the calcium, magnesium, **potassium**, and **sodium** salts of **gluconic acid**; polyglycitol syrups; benzoates; butylated hydroxyanisole (BHA); butylated hydroxytoluene (BHT); and tert-butylhydroquinone (TBHQ). The report also includes safety evaluations of the following related substances: saturated aliphatic acyclic secondary alcohols, ketones, and related saturated and unsaturated esters; linear and branched-chain aliphatic unsaturated, unconjugated alcohols, aldehydes, acids, and related esters; aliphatic acyclic and alicyclic terpenoid tertiary alcohols and structurally related substances; carvone and structurally related substances; ionones and structurally related substances; aliphatic acyclic and alicyclic alpha-diketones and related alpha-hydroxyketones; and substances related to menthol.
CT ADDITIVES; ANTIOXIDANTS; BAKERY ADDITIVES; BENZOATES; BHA; BHT; CARRAGEENAN; COLOURINGS; CYCLODEXTRINS; DAILY INTAKE; DIETARY GUIDELINES; EUCHEUMA; EVALUATION; **FLAVOURINGS**; FURFURAL; GAMMA CYCLODEXTRIN; GDL; GELLING AGENTS; GLUCONATES; INTAKE; LEAVENING AGENTS; MENTHOL; POLYGLYCITOL SYRUP; POLYSACCHARIDES; PRESERVATIVES; RDI;

RIBOFLAVIN; SAFETY; SEAWEEDS; **SODIUM** CARBOXYMETHYLCELLULOSE; STEVIOSIDE; SULFITES; SULFUR DIOXIDE; SWEETENERS; TBHQ; THICKENERS; TOXICITY; TRANS ANETHOLE; VITAMINS
DED 9 Dec 1999

L5 ANSWER 26 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 491684 FROSTI
TI Compendium of food additive specifications, addendum 6: 51st session of JECFA, Geneva, June 1998.
AU Food and Agriculture Organization; World Health Organization; Joint Expert Committee on Food Additives
SO Published by: FAO, Rome, 1998, 219pp
FAO Food and Nutrition Paper, No.52, Add.6
ISBN: 92-5-104171-7
DT Book
LA English
AB Specifications of identity and purity are presented for the following additives: alpha-acetolactate decarboxylase from Bacillus brevis expressed as Bacillus subtilis; acetone; aluminum powder; calcium **gluconate**; calcium hydrogen sulfite; calcium propionate; calcium sorbate; canthaxanthin; carnauba wax; carob bean gum; algae and vegetable carotenes; carrageenan; carhamus red; carthamus yellow; citric acid; cochineal extract; curcumin; gamma-cyclodextrin; diacetyltartaric and fatty acid esters of glycerol (DATEM); dichloromethane; ethyl-p-hydroxybenzoate; ferrous **gluconate**; ferrous sulfate; glucono delta-lactone; guar gum; gum arabic; hexanes; hexylresorcinol, isobutanol; magnesium **gluconate**; maltogenic amylase from Bacillus stearothermophilus expressed in Bacillus subtilis; methyl-p-hydroxybenzoate; microcrystalline cellulose; mineral oil (medium and low viscosity); nitrogen; petroleum jelly; polydextroses; polyglycitol syrup; **potassium gluconate**; **potassium** metabisulfite; **potassium** sorbate; **potassium** sulfite; processed Eucheuma seaweed; propan 2-ol; propionic acid; propyl p-hydroxybenzoate; riboflavin form Bacillus subtilis; bleached shellac; enzymically hydrolysed **sodium** carboxymethyl cellulose; **sodium gluconate**; **sodium** hydrogen sulfite; **sodium** metabisulfite; **sodium** sulfite; **sodium** thiosulfate; sorbitan monolaurate; sucrose esters of fatty acids; sulfur dioxide; talc; thaumatin; and xanthan gum. The following parameters are given for each additive: synonyms, definition, chemical names, CAS number, chemical formula, structural formula, assay, functional uses, characteristics, description, purity, and identification tests. In addition, specifications of identity and purity are presented for 232 **flavouring** agents.
CT ADDITIVES; APPLICATIONS; DETERMINATION; **FLAVOURINGS**; IDENTIFICATION; PROPERTIES; PURITY; SPECIFICATIONS
DED 22 Apr 1999

L5 ANSWER 27 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 477416 FROSTI
TI Noodle containing **gluconic acid** alkali metal salt.
IN Nakamura T.; Takenawa M.
PA Fujisawa Pharmaceut. Co. Ltd
SO Japanese Patent Application
PI JP 10056997 A 19980303
AI 19960822
NTE 19980303
DT Patent
LA Japanese
SL English
AB A **gluconic acid** alkali metal salt (**potassium**

gluconate, sodium gluconate, etc.) is used alone or with **sodium** chloride to improve the **flavour** of low- or no-**sodium** noodles. When the **gluconate** is used alone, the rate of addition is the same as that of the **sodium** chloride it replaces.

CT CEREAL PRODUCTS; GLUCONATES; JAPANESE PATENT; LOW **SODIUM** NOODLES; LOW **SODIUM** PASTA; NOODLES; PASTA; PATENT; **POTASSIUM GLUCONATE**; SALT SUBSTITUTES; **SODIUM GLUCONATE**

DED 16 Oct 1998

L5 ANSWER 28 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 472795 FROSTI
TI Production of breads and bread crumb.
IN Kiuchi F.; Shibuta S.
PA Rennou Suisan KK
SO Japanese Patent Application
PI JP 10014481 A 19980120
AI 19960702
NTE 19980120
DT Patent
LA Japanese
SL English
AB Calcium **gluconate** is used in place of **sodium** chloride in bread dough at a rate of 0.3-2.5% of the flour. This imparts good volume, texture and **flavour** to the bread and makes the breadcrumbs crisp.
CT BAKERY ADDITIVES; CALCIUM **GLUCONATE**; JAPANESE PATENT; LOW **SODIUM** BAKERY PRODUCTS; LOW **SODIUM** BREAD; SALT SUBSTITUTES
DED 5 Aug 1998

L5 ANSWER 29 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 447325 FROSTI
TI Utilization of **sodium** and **potassium** gluconates for baked goods.
IN Takano H.; Kakiuchi T.; Ise N.
PA Fujisawa Pharmaceutical Co. Ltd
SO European Patent Application
PI EP 796558 A1
WO 9617521 19960613
AI 19951128
PRAI Japan 19941207
DT Patent
LA English
SL English
AB Alkali metal gluconates may be used as full or partial replacements for **sodium** chloride in bread and bakery products. This patent application describes the use of gluconates in bakery applications. They are particularly suitable for individuals needing to follow a low-**sodium** diet, as the **flavour** is comparable to that of conventional baked goods. **Sodium** or **potassium** **gluconate** may be used in chilled and frozen doughs, bread, French bread, rye bread, sweet dough products such as panettone, pizza doughs, and steamed Oriental buns and doughnuts.
CT APPLICATIONS; BAKERY ADDITIVES; EUROPEAN PATENT; GLUCONATES; LOW **SODIUM** FOODS; **POTASSIUM GLUCONATE**; **SODIUM GLUCONATE**
DED 29 Oct 1997

L5 ANSWER 30 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 423403 FROSTI

TI Suppression of bitterness by **sodium**: implications for **flavor** enhancement.
AU Breslin P.A.S.; Beauchamp G.K.
SO Contribution of low- and non-volatile materials to the flavor of foods., Published by: Allured Publishing Corporation, Illinois, 1996, 95-117 (54 ref.)
Pickenhagen W.
ISBN: 0-931710-50-2
DT Book Article
LA English
AB When two compounds that elicit different taste qualities are mixed in solution the resulting taste sensation is sometimes less intense than the simple sum of the component tastes. Taste interactions between salts (**sodium** chloride, **sodium** acetate, **sodium gluconate**, **potassium** chloride, lithium chloride, L-arginine-L-aspartate) and bitter compounds (urea, quinine hydrochloride, caffeine, magnesium sulphate, **potassium** chloride, amiloride) were investigated. Most bitter tasting compounds were suppressed by **sodium** chloride, but there was less suppression of the saltiness by bitter compounds. **Sodium** acetate suppressed the bitterness of both urea and quinine hydrochloride. **Sodium gluconate** suppressed the bitterness of urea. The mechanisms involved in the suppression of bitterness of urea by different salts were studied.
SH BIOCHEMISTRY
CT BITTER; BITTER COMPOUNDS; BITTERNESS; COMPOUNDS; **FLAVOUR**; **FLAVOUR** COMPOUNDS; INTENSITY; MIXTURES; SALTS; SALTY **FLAVOUR**; **SODIUM** CHLORIDE
DED 3 Dec 1996

L5 ANSWER 31 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 399184 FROSTI
TI Suppression of bitterness by **sodium**: variation among bitter taste stimuli.
AU Breslin P.A.S.; Beauchamp G.K.
SO Chemical Senses, 1995, 20 (6), 609-623 (44 ref.)
DT Journal
LA English
SL English
AB Studies have shown that **sodium** chloride suppresses the perceived bitterness of quinine hydrochloride (QHCl). This study investigated whether **sodium** chloride and other salts (lithium chloride, **potassium** chloride, L-arginine:L-aspartic acid, **sodium** acetate and **sodium gluconate**) could suppress the bitterness of several bitter-tasting compounds (urea, QHCl, magnesium sulfate, **potassium** chloride, amiloride hydrochloride and caffeine). The effect of anion, cation and salt concentration on bitterness was also studied. The possible suppression of saltiness by the bitter compounds was also investigated. The results showed that, generally, the perceived bitterness of the bitter compounds was suppressed by salts. The saltiness of the different salts was suppressed only when the levels of perceived saltiness were low. It was found that the presence of the **sodium** ion and lithium ion was necessary for the suppression of bitterness. Mechanisms for bitterness sensations are discussed.
SH PHYSICAL AND SENSORY
CT BITTER; BITTERNESS; DETERMINATION; EVALUATION; **FLAVOUR**; INHIBITION; INTENSITY; LITHIUM CHLORIDE; **POTASSIUM** CHLORIDE; PREVENTION; PROPERTIES; QUININE HYDROCHLORIDE; REDUCTION; SALTS; SALTY **FLAVOUR**; SENSORY; SENSORY ANALYSIS; SENSORY PROPERTIES; **SODIUM** CHLORIDE; TYPE; UREA
DED 19 Jan 1996

L5 ANSWER 32 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 394887 FROSTI
TI Premix for puffed wheat flour food.
IN Yasumura D.; Nagao T.; Mikawa Y.; Kameo Y.; Ono Y.; Maeda H.
PA Kao Corp.
SO Japanese Patent Application
PI JP 06327394 A 19941129
AI 19930519
NTE 19941129
DT Patent
LA Japanese
SL English
AB A cake mix for producing a product having excellent appearance, **flavour** and mouthfeel is claimed. The mix contains wheat flour, maltose, powdered palm oils and fats, an alkaline raising agent such as **sodium** bicarbonate, and an acidic raising agent containing glucono-delta-lactone and **gluconic acid** in specified amounts.
CT CAKE MIXES; CAKES; CONVENIENCE; JAPANESE PATENT; MIXTURES; POWDERS
DED 17 Nov 1995

L5 ANSWER 33 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 371169 FROSTI
TI Effect of amiloride on the taste of NaCl, Na **gluconate** and KCl in humans: implications for Na+ receptor mechanisms.
AU Ossebaard C.A.; Smith D.V.
SO Chemical Senses, 1995, 20 (1), 37-46 (41 ref.)
DT Journal
LA English
SL English
AB The effects of amiloride, an epithelial **sodium** channel blocker, on the taste of **sodium** chloride, **sodium gluconate**, and **potassium** chloride in humans were investigated. Five concentrations of each of the stimuli were presented to the anterior tongue following distilled water adaptation and after amiloride treatment. Subjects gave magnitude estimates of total intensity and basic taste qualities for the salts. A decrease in total taste intensity of the **sodium** salts was observed after amiloride treatment, but **potassium** chloride was not affected. Amiloride did not affect the saltiness of the 3 salts, but did decrease the perceived sourness of the **sodium** salts; the sourness of **potassium** chloride was unaffected. Amiloride had a greater effect on **sodium gluconate** than on **sodium** chloride.
SH PHYSICAL AND SENSORY
CT AMILORIDE; CHLORIDES; **FLAVOUR**; GLUCONATES; HUMANS; MECHANISMS; **POTASSIUM**; PROPERTIES; RECEPTORS; SALTS; SENSORY; SENSORY PROPERTIES; **SODIUM**
DED 28 Apr 1995

L5 ANSWER 34 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 82959 FROSTI
TI Saccharin combinations and special formulations.
AU Pintauru N.D.
SO Sweeteners and Enhancers, Food Technology Review No. 10, 143-78.
UDC, 547
NTE 455+.458
DT Miscellaneous
CT BUFFERS; CALCIUM CHLORIDE; CALCIUM **GLUCONATE**; CHEMICAL; CITRATES; DIPEPTIDE SWEETENERS; DIPEPTIDES; FACTORS AFFECTING; **FLAVOUR**; GALACTOSE; GDL; LACTOSE; MALTOL; MANNITOL;

OXAZOLIDINONE; PECTINS; PIPERAZINE; PROPERTIES; RIBONUCLEOTIDES; SACCHARIN; **SODIUM** CHLORIDE; SUGAR; SWEETENERS; TRYPTOHAN; TRYPTOPHAN; TYPE; US PATENT

DED 1 Oct 1980

L5 ANSWER 35 OF 35 FROSTI COPYRIGHT 2002 LFRA

AN 77261 FROSTI

TI Specification for the identity and purity of some food colours, **flavour** enhancers, thickening agents, and certain other food additives.

AU WORLD HEALTH ORGANISATION.

SO Wld Hlth Org. Food Additives Ser., No. 7, 216pp., 1976

NTE B.

DT Report

CT ADDITIVES; ALUMINIUM **POTASSIUM** SULPHATE; ALUMINIUM SULPHATE; ANNATTO; APO 8 CAROTENAL; APO 8 CAROTENOIC ACID; BETA CAROTENE; BETANIN; BRILLIANT BLACK PN; BUTYL 4 HYDROXYBENZOATE; CALCIUM ALUMINIUM SILICATE; CALCIUM DIGLUTAMATE; CALCIUM **GLUCONATE**; CALCIUM GUANYLATE; CALCIUM INOSINATE; CALCIUM LACTATE; CALCIUM RIBONUCLEOTIDE; CALCIUM SACCHARIN; CANTHAXANTHIN; CARAMEL; CARMOISINE; CAROTENE; CARRAGEENAN; CHLOROPHYLLIN; CHLOROPHYLLS; COLOURINGS; DIOCTYL **SODIUM** SULPHOSUCCINATE; ERYTHROSINE; FERROUS **GLUCONATE**; **FLAVOUR** ENHANCERS; GDL; GLUTAMIC ACID; GLYCEROL ESTER; GREEN S; GUMS; INDIGO CARMINE; IRON OXIDE; MANNITOL; MONOAMMONIUM GLUTAMATE; MONOGLYCERIDE CITRATE; MONOPOTASSIUM GLUTAMATE; PATENT BLUE; PECTINS; PONCEAU 4R; PROPERTIES; QUALITY; ROSIN; TARA GUM; XANTHAN GUM

DED 1 Oct 1980

AN 1999(08):A1191 FSTA
TI Anion size of **sodium** salts and simple taste reaction times.
AU Delwiche, J. F.; Halpern, B. P.; Desimone, J. A.
CS Monell Chem. Senses Cent., 3500 Market St., Philadelphia, PA 19104-3308, USA. E-mail delwiche(a)monell.org
SO Physiology & Behavior, (1999), 66 (1) 27-32, 41 ref.
ISSN: 0031-9384
DT Journal
LA English
AB Taste intensity and taste quality of aqueous solutions containing Na.sup.+ differ depending on the anions which are present. This study tested the hypothesis that simple taste reaction times (RT) in response to anterodorsal tongue stimulation with various Na salts (chloride, acetate, glutamate, ascorbate and **gluconate**) would increase with increasing anion size. RT to 100mM aqueous solutions of each Na salt were examined in 12 adults. RT increased ($P < 0.001$) with mol. wt. of the tastant; a high correlation ($r = 0.941$) was found between RT and the square root of anionic wt. A significant linear relationship ($P < 0.001$) was also found between RT and perceived taste intensity. Nevertheless, when results were controlled for the influence of taste intensity on RT, the linear relationship between RT and the square root of anionic wt. of the Na salts remained. Results are considered in relation to current models of gustatory responses. It is concluded that the anionic component of Na salts has an effect on the speed of taste responses beyond that which could be accounted for by perceived taste intensity.
CC A (Food Sciences)
CT **FLAVOUR**; SALTS; SENSORY ANALYSIS; **SODIUM**; NA

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AN 1996(03):A0057 FSTA
TI Suppression of bitterness by **sodium**: variation among bitter taste stimuli.
AU Breslin, P. A. S.; Beauchamp, G. K.
CS Monell Chem. Senses Cent., 3500 Market St., Philadelphia, PA 19104, USA
SO Chemical Senses, (1995), 20 (6) 609-623, many ref.
ISSN: 0379-864X
DT Journal
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AB Taste interactions between salts (NaCl, LiCl, KCl, L-arginine:L-aspartic acid, Na-acetate and Na-**gluconate**) and bitter tasting compounds (urea, quinine HCl, magnesium sulphate, KCl, amiloride HCl and caffeine) were investigated. In each study binary combinations of 3 or 4 concn. of 1 bitter compound with 4 concn. (0, 0.1, 0.3 and 0.5M) of one salt were rated for bitterness and saltiness using the method of magnitude estimation. In most cases, perceived bitterness was suppressed by salts, although the degree of suppression varied. In general, bitterness suppression was not accompanied by an equivalent reciprocal suppression of saltiness. Only MgSO.sub.4 and amiloride had suppressing effects on the saltiness of NaCl at the intermediate concn. and no bitter compound affected the saltiness at high concn. of NaCl. Since salt suppressed the bitterness of urea effectively, a detailed analysis of suppression of the bitterness of urea by different salts was conducted. Those studies indicated that the key component in this effect was the **sodium** or lithium ion for 2 reasons: all 3 **sodium** salts and the lithium salt had a suppressive effect on bitterness, whereas KCl did not; and the effect of salt on suppression of the bitterness of urea was independent of its perceived saltiness; i.e. NaCl, Na-acetate (which is perceived as less salty than NaCl), and Na-**gluconate** (which is perceived as less salty than Na-acetate) reduced bitterness comparably. Results suggest that there is a major peripheral component to the suppression of the bitterness of urea, and perhaps other bitter tasting compounds, by **sodium**.
CC A (Food Sciences)
CT BITTER COMPOUNDS; **FLAVOUR**; MINERALS; SALTS; SENSORY PROPERTIES; **SODIUM**; BITTERNESS

AN 1973(06):T0272 FSTA
TI Artificial sweeteners.
PA Cumberland Packing Corp.
SO British Patent, (1972)
PI GB 1299135
DT Patent
LA English
AB Saccharin composition having no bitter aftertaste employ mixtures of .gamma.-gluconolactone, **sodium** or **potassium** **gluconate**, and **potassium** bitartrate.
CC T (Additives, Spices and Condiments)
CT **FLAVOUR**; SACCHARIN; AFTERTASTE; BITTER # ELIMINATION

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CC A (Food Sciences)
CT BITTER COMPOUNDS; **FLAVOUR**; MINERALS; SALTS; SENSORY PROPERTIES; **SODIUM**; BITTERNESS

AN 524351 FROSTI

TI Method of controlling release of bitterness inhibitors in chewing gum and gum produced thereby.

IN Gudas V.V.; Reed M.A.; Schnell P.G.; Tyrpin H.T.; Witkewitz D.L.; Greenberg M.J.; Wolf F.R.

PA Wm Wrigley Jr Co.

SO European Patent Application

PI EP 979039 A1
WO 9823166

AI 19961223

DT Patent

LA English

SL English

AB In formulation of chewing gum containing bitter substances such as caffeine or medications, it is desirable to include a bitterness inhibitor that is rapidly released during chewing. This patent application describes a process for physical modification of the release properties of the inhibitor. This is coated by encapsulation, followed by agglomeration and entrapment by absorption. The method may be used with **sodium gluconate** or other bitterness inhibitor such as **sodium** ascorbate, **sodium** glycinate, **sodium** ferulate, or ferulic acid. A rapid or a delayed release may be achieved, as required in the formulation. The inhibitors may be used in low- or high-moisture gum compositions, and with sucrose-type or sugar-free gums.

CT ADDITIVES; BITTERNESS; CHEWING GUM; CONFECTIONERY; CONTROLLED RELEASE ADDITIVES; EUROPEAN PATENT; **FLAVOUR**; INHIBITION; PATENT; SENSORY PROPERTIES; SUGAR CONFECTIONERY

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TI Artificial sweeteners.
PA Cumberland Packing Corp.
SO British Patent, (1972)
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DT Patent
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AB Saccharin composition having no bitter aftertaste employ mixtures of .gamma.-gluconolactone, **sodium** or **potassium** **gluconate**, and **potassium** bitartrate.
CC T (Additives, Spices and Condiments)
CT **FLAVOUR**; SACCHARIN; AFTERTASTE; BITTER # ELIMINATION